

InFusion View Visualization Software for the Process Industries

INFUSION™
Enterprise Control System

AVANTIS • FOXBORO • SIMSCI-ESSCOR • TRICONEX • WONDERWARE

BENEFITS

- ▶ Streamline graphical windows while greatly expanding the amount of information available
- ▶ Decrease the amount of time and cost of creating, modifying, deploying, maintaining and standardizing software applications
- ▶ Seamlessly integrate with legacy and new plant systems, enabling fast connectivity to real-time and historical information
- ▶ Preserve engineering efforts through re-use and standardization of graphical information
- ▶ Enable expert software engineers as well as non-programmers to quickly customize application functions
- ▶ Can be easily expanded to meet future requirements



The InFusion ECS is the world's first Enterprise Control System — a new class of system that goes beyond traditional operational control to deliver true enterprise control. It is the first system that spans all traditional automation and information domains and integrates all of today's process automation and information systems, regardless of supplier or generation, as one business environment. This capability enables a more collaborative environment and a greater level of agility for detecting and responding to unanticipated problems.

As an enabling platform for Asset Performance Management (APM), the InFusion ECS extends closed loop control throughout an organization delivering increased visibility throughout the enterprise; unprecedented, affordable integration; incomparable productivity; and an intelligent foundation for business optimization.

Invensys brings together world-class technologies and know-how, balancing asset availability and utilization to maximize the economic value of all plant assets, to deliver true APM.

By providing the right information to the right people in the right context at the right time, the InFusion ECS can empower everyone in an enterprise—from executives to the plant-floor operator.

InFusion™ View visualization software, based on Wonderware InTouch®, combines the world's leading HMI software with cutting-edge graphical advances to enable customers to obtain tremendous improvements in operational and engineering productivity. The InFusion View HMI includes easy-to-use, object-oriented programmable graphics and tightly integrated communication connectivity to the InFusion MESH network. It is an open and extensible HMI that enables flexibility in custom application design with connectivity to the broadest set of control and automation devices in the industry.

GAIN A COMPETITIVE ADVANTAGE WITH A UNIFIED APPLICATION ENVIRONMENT

InFusion View software is built on the groundbreaking ArcestrA architecture. ArcestrA technology enables users to have a unified environment that integrates information from multiple disparate sources and provides a common infrastructure and set of services. A significant competitive advantage is gained with the ability to design, build, deploy, maintain and standardize applications with the lowest total cost of ownership. Benefits include:

- Easy updates to existing applications
- Dramatically decreased costs to develop new automation projects
- Substantially reduced implementation time

This architectural approach facilitates the easy extension and expansion of existing systems to stay competitive and increase manufacturing agility. In addition, users can quickly create applications that conform to company standards yet are versatile enough to be strategically deployed throughout an organization via the best-suited devices for increasing productivity and efficiency.

Expansive Graphical User Interface (GUI) for Flexibility. The InFusion View HMI empowers users to quickly and easily develop custom graphical views of their processes. Users can develop graphics with a variety of tools in the WindowMaker graphical editing program, which includes:

- Standard graphical components
- Bitmap images
- ActiveX controls
- A graphics library that contains thousands of pre-configured industrial images
- SmartSymbol technology

Plant employees also can leverage advanced development tools such as pan, zoom and rubber-banding to improve the speed and accuracy of application development.

POWERFUL WIZARDS AND TEMPLATES

SmartSymbols for Increased Productivity. The InFusion View HMI is SmartSymbol-enabled, which represents an enormous advancement in the creation, deployment and modification of graphical elements inside an application. SmartSymbols offer considerable savings by significantly reducing application engineering, testing and deployment time, and enabling the creation of reusable templates from graphics. These object-oriented graphics contain the graphical, script and tag controls that an application object needs to be useful in a production environment.

Rapid Change Propagation. SmartSymbol graphics enable rapid propagation of changes throughout the application and even across multiple networked PC workstations. Users only modify the SmartSymbol template once and the changes are automatically propagated throughout the application. This makes changing, upgrading and modifying — as well as validating and revalidating applications after modification — very fast and simple.

Productivity Improvements. Using SmartSymbols increases productivity when creating new applications and modifying existing applications. New applications can be quickly created using standard SmartSymbol libraries, facilitating easier compliance with standard operating procedures. Existing applications can easily be enhanced by modifying the SmartSymbol template. Customers benefit from improved flexibility and greater productivity.

More Information, Less Screen Clutter. New “tooltips” and “mouse-over” capabilities enable users to obtain more information about the real-time data and graphics being displayed in the window. This results in streamlined, uncluttered screens that can quickly display vital information. Additionally, these capabilities provide context to data, enable faster analysis, and facilitate better understanding of displayed information.

Powerful Easy-to-Use .NET Editor. With the .NET Editor, an InFusion View application can be extended and customized to address specific system requirements, making InFusion View software one of the most flexible HMI products on the market. Scripts can be configured to execute based on numerous parameters, such as specific process conditions, data changes, application and windows events, keyboard strokes and ActiveX events. Users can also develop a library of scripts that can be re-used, simplifying the application and resulting in decreased initial engineering and application maintenance time as well as deployment.

The .NET Editor is simple to use and extremely powerful, enabling complete customization of applications with common expressions and structures, such as “greater than,” “less than,” “for-next” and “if-then-else” as well as advanced functions including mathematical expressions and string conversions.

.NET. A built-in validation engine enables the user to check scripts before deploying them, preventing runtime errors. In addition, experienced users can write scripts and edit directly in the script editor, or cut and paste from other applications, encouraging re-use and saving engineering time.

The .NET Editor gives users the flexibility to quickly and easily customize applications. From novice to expert programmer, everyone benefits from InFusion View scripting.

PROTECT YOUR SYSTEM WITH INTEGRATED SECURITY

When integrated with the InFusion Application Environment, InFusion View software provides an integrated option that enables users to configure a security model that matches their requirements. The software’s Access-Level Password Security limits user capabilities in the InFusion View application based on areas of responsibility and authority.

BENEFIT FROM UNRIVALED CONNECTIVITY

InFusion View software can connect to virtually any industrial automation control device using hundreds of available I/O and OPC servers that are designed to connect to control systems and devices.

InFusion View software offers connectivity to major hardware manufacturers including Foxboro, Rockwell, Siemens, Schneider and others. Third-party developers can also use the ArchestrA DAS (DA Server) Toolkit to create additional servers that incorporate one or all of the communication methods listed in this document.

TROUBLESHOOT EFFECTIVELY WITH ADVANCED ALARM CAPABILITIES

Knowledge of system alarms and the ability to acknowledge them in a timely manner can save hours of costly downtime and enable faster responses in critical situations. InFusion View software includes several analysis tools and views into alarms, provides the information needed to proactively correct situations and to analyze events before, during and after an alarm situation. Troubleshooting tools include:

- Distributed Alarm Display — provides summary information of current alarms
- Database View Control — displays historical alarms that have been logged in the InFusion View alarm logger database
- Alarm Viewer Control — an ActiveX control that provides both current summary and historical session alarm information

InFusion View software also contains several built-in and runtime configurable tools to enable users to quickly answer questions about specific alarm conditions. The tools assist plant employees in determining the nature of an alarm, its location and options for supporting fast analysis of alarm conditions coupled with immediate response capabilities.

- Alarm Analysis Tools
- Built-In Pareto Charts
- Alarm Tree Navigation Windows
- Alarms Sortable at Runtime

Easy-to-use Wizards and dialog boxes make alarm configuration simple to implement. An InFusion View user gains complete control over the current alarms in a system and the retrieval of historical alarm information.

Alarm Acknowledgement. InFusion View software offers three alarm acknowledgement models:

- Traditional, condition-oriented alarms
- Event alarms, which are compatible with the OPC alarm model and require an acknowledgment for the most recent transition to an alarmed state
- Expanded Summary alarms, which support acknowledgment of each transition into and out of an alarmed state

Alarm Flexibility. Users have tremendous flexibility when configuring and viewing alarms, including:

- Alarm Inhibitor Tags that facilitate the enabling or disabling of alarms directly or indirectly
- Alarm suppression that disables the display of alarm information on a specific view or workstation and can be applied to single alarm classes, tags or groups
- System-wide disablement, which can block alarm activity at the source
- Powerful Distributed Alarm Subsystems

Alarm Provider. The Alarm Provider determines alarm conditions and publishes the alarms to the InFusion View Distributed Alarm Subsystem. Alarm consumers such as the Distributed Alarm Display are clients that receive information from the InFusion View Distributed Alarm Subsystem.

Alarm Database. The InFusion View Distributed Alarm Subsystem supports logging alarms and events to a Microsoft SQL Server 7.0, 2005 or MDSE database. This function gives users the power of a relational database regardless of the application size or project budget.

Easy-to-Configure Hot Backup and Resynchronization. The distributed alarm system facilitates the configuration of a secondary backup Alarm Provider. Furthermore, if a primary Alarm Provider fails, the distributed alarm subsystem is designed to seamlessly acquire alarm information from the backup system. Upon reconnection to the primary Alarm Provider, the distributed alarm subsystem synchronizes the information before the primary system becomes live again.

LEVERAGE THE COMBINED POWER OF INFUSION VIEW SOFTWARE AND THE INFUSION APPLICATION ENVIRONMENT TO GAIN SIGNIFICANT COMPETITIVE ADVANTAGES

InFusion View software and the InFusion Application Environment are both built on the ArchestrA architecture, which enables reusable, distributed application development with centralized deployment and maintenance — resulting in best-of-breed applications with the lowest lifecycle costs. Used together, the InFusion View HMI and InFusion Application

Environment provide an information and automation application environment that supports the following activities:

- Development of advanced HMI templates that can be easily created, replicated and modified
- A single tag namespace that enables the addition of client and server computers that seamlessly connect to and integrate with the application without requiring any additional engineering effort
- Remote, centralized software deployment, change management and monitoring that eliminate the need to physically go to HMI computers to make changes
- An active (real-time), deterministic, plant-wide visualization system that can read and write values to a large number of PLCs and control devices

SUPPORT VIRTUALLY ANY APPLICATION WITH EXTREMELY FLEXIBLE AND SCALABLE ARCHITECTURAL OPTIONS

InFusion View software fulfills the requirements of many different environments. System solutions range from single-workstation visualization stations to multi-plant, multi-country applications and SCADA solutions that require visualization for remote, unmanned locations.

The InFusion View HMI offers a variety of deployment methods to meet customer needs today while enabling a path for future growth — at all times preserving engineering effort and time.

Self-Contained, Standalone Visualization Stations. In a standalone architecture, InFusion View software is installed on a single computer workstation.

Each workstation is completely self contained and not dependent on any other computer for operation. These systems can also be networked together.

Reliable and Effective Client/Server Architectures. Another configuration option is a client/server architecture. In this scenario, the InFusion View software is installed on the server and accessed by client computers. This method saves time and money on software maintenance and administration and provides additional security and redundancy functionality. The InFusion View HMI can be deployed in a Terminal Services architecture, in which InFusion View software is installed on a terminal server. Clients access InFusion View application sessions running on the terminal server.

Terminal Services capabilities add:

- Centralized software deployment, maintenance and management
- Re-use of existing, older hardware
- High levels of security and redundancy
- Client support for multiple operating systems for standard InFusion View applications

Support for thin-client terminals, PDAs, Tablet PCs and browser visualization client operating system support includes:

- Microsoft Windows 2000, XP, 2003, CE, NT 3.51 and 4.0, and Embedded Windows NT (NTE) operating systems
- Microsoft Windows for Workgroups 3.11, 95 and 98 operating systems
- Linux operating systems
- UNIX operating systems

InFusion View software running in a Terminal Services environment empowers industrial employees to reduce the time and effort spent on software administration and management. At the same time, they can use the most up-to-date versions of the application software with a high degree of reliability and security.

InFusion Application Environment — The InFusion Application Environment uses the InFusion View graphics engine for process visualization. The InFusion View graphics engine, combined with the InFusion Application Environment, contains all of the functionality and features of the InFusion View HMI, plus the productivity and cost savings of the InFusion Application Environment. The InFusion Application Environment greatly reduces the engineering effort and time required to maintain and deploy systems within one plant or across multiple plants.

Reductions in Software Administration and Management. InFusion View software includes several options for significantly reducing the time and effort required to administer and manage software applications.

Dynamic Network Application Development (NAD). Dynamic NAD facilitates centralized maintenance of an InFusion View application master copy using one network server.

It offers:

- Strong redundancy — each client maintains a local copy of the master application
- Unparalleled reliability — the client continues working, even if the master server is unavailable
- Seamless reconnections — from client to server after disruptions

NAD also facilitates changes to the master application through:

- Online modification changes — no need to shut down the running application
- Dynamic operator alerting — allows the operator to accept or delay configuration changes
- Fast downloads — only changes are downloaded

NAD enables the operator to have the most current application while allowing the running application to be updated at any time, without incurring downtime or loss of process visualization.

InFusion Application Environment-Based Systems. The InFusion Application Environment provides additional reduction of time for the deployment, maintenance and diagnostics of applications through the following features:

- Online Maintenance and Expansion — Upgrades can be done on portions of the application without restarting the entire system, enabling companies to lower maintenance costs and respond quickly to changes or problems.
- Remote Deployment — Upgrades can be completed on portions of the application without restarting the entire system, enabling companies to lower maintenance costs and respond quickly to changes or problems. In addition, new plant equipment or workstations can be easily added without disrupting the rest of the line or plant.
- Remote System-Wide Diagnostics — Engineers save valuable engineering and troubleshooting time by centrally managing system-wide diagnostics. Any workstation on the network, local or remote, can be configured to view the entire status of the system.

The InFusion Application Environment and NAD enable users to change every aspect of their application remotely.

UTILIZE EFFECTIVE DESIGN AND CONTROL FEATURES FOR DISTRIBUTED SYSTEMS

InFusion View software offers several additional features to enable better application design and control for distributed environments. These include:

Remote Tag Referencing — Developers can create an InFusion View application without using any local tag names. At runtime, client workstations connect to the tag server or the InFusion Application Environment to retrieve information. Remote Tag Referencing enables companies to reduce costs and save time because users can create one template and re-use it several times throughout the application.

Distributed History — Personnel can dynamically specify a different historical file or data source for each pen of a trend chart. This allows an operator to view both native InFusion View history and InFusion Historian Server history in the same trend. Distributed history trending enables swift analysis of historical information on one screen, saving time and improving the analysis of multiple variables.

Dynamic Resolution Conversion (DRC) — Develop an application in one screen resolution and run the application in another, without affecting the original application. Applications can also run at a user-defined resolution, instead of the display resolution, and take advantage of multiple monitors within an application without worrying about where the windows will appear. Dynamic Resolution Conversion enables users to save time by deploying applications anywhere, on displays of any size, without redesigning, copying or modifying the original application.

Distributed Time Zones — This feature provides services to both the distributed history and alarm systems, permitting value viewing in local time. This is important because it eliminates confusion over determining when events actually occurred.

CREATE WORLDWIDE APPLICATIONS

Language Support. InFusion View software is supported in English, German, French, Japanese and Simplified Chinese. Additional languages are also available around the world.

Runtime Language Switching. The languages displayed through the application can be dynamically changed at runtime based upon the requirements of the user. This capability enables global companies to provide information to the user in a preferred language, eliminating communication barriers and improving production and performance throughout the organization.

Time and Date Functions. Users can access UTC time, the current local time, the current time offset from the GMT zone, and Daylight Savings Time status for their applications, simplifying worldwide application management.

MAKE FULL USE OF THESE PRODUCTIVITY FEATURES

One Click, Real-Time Information Access Failover. Point-and-click failover to a separate computer workstation is highly valuable in cases of failure. In these situations, InFusion View software facilitates a switch from a primary to secondary communication computer, which is also connected to plant devices.

Fast Visualization from Multiple Devices. InFusion View users can run a script function to modify the data source for ArcestrA Objects or InFusion View tag references at runtime. This

enables users to view information from different devices, objects, areas and plants based on particular conditions or directly via user interaction. Updating the real-time information in the window is very fast because only one line of script needs to execute.

Tablet PC Support. InFusion View software has been enhanced to leverage Microsoft Tablet PC features such as Inking and Annotation.

Inking enables customers to write values into data links in their own handwriting. The InFusion View application recognizes numbers and/or text in multiple languages and inputs them into the data field.

Annotation enables users to mark up a graphical display with pens and highlighters. After capturing and annotating a graphical screen, the user can instantly e-mail, print or save the screen capture to facilitate troubleshooting and explanations of the production process.

Deployment. The InFusion View Fast Switch function enables application developers to switch back and forth between runtime and development environments at the click of a button. Engineers can quickly determine how their applications will look and behave before deploying them into a production environment. In addition, the InFusion View HMI can be started as a service, enabling automatic application start up and continuous operation through multiple log-on and log-off cycles.

Local Variables. InFusion View software supports the use of local variables in scripts to store temporary results and create complex calculations with intermediate scripting values.

“Designed for Windows XP” Certification. InTouch software is the first HMI to qualify for Microsoft’s prestigious “Designed for Windows XP” certification. This means that InFusion View applications will install and run on the Windows XP platform.

INTEGRATE INFUSION VIEW SOFTWARE WITH OTHER INFUSION COMPONENTS

InFusion View software can function as a universal client. It can be used as a front end for the InFusion Application Environment, InBatch for InFusion production management software, the InFusion Historian, and DT Analyst asset monitoring software. InFusion View graphical windows can be viewed over a PDA, Tablet PC, thin-client terminal, standard computer display and over a browser. In addition, client tools such as ActiveFactory for InFusion analysis tools, SuiteVoyager Web analysis portal, QI Analyst SPC/SQC software and SCADAAlarm event-notification software collaborate with the InFusion View HMI to provide additional information about the industrial process.

SYSTEM REQUIREMENTS

To run InFusion View software, the following hardware and software configurations are recommended:

Hardware

Minimum

- 1.2-GHz Pentium III or greater
- 512-MB of RAM, plus 5 MB of additional RAM per 5K tags
- 2-GB Free Hard Disk Space

Operating Systems*

- Microsoft Windows XP
- Microsoft Windows XP Tablet Edition

*with the latest service packs applied

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